

**CLAIMS**

**What is claimed:**

1. An apparatus for use in generating images of a selected region of a patient's body, comprising:

5 a radiation source for transmitting a radiation signal through a selected region of a patient's body;

radiation detection means, positionable for scanning movement along a first path, for receiving a portion of said radiation signal passing through a selected region of a patient's body during said scanning movement and providing a first image signal responsive thereto;  
10 and

an ultrasound transducer, positionable for scanning movement along a second path, for receiving an ultrasound signal from a selected region of a patient's body during said second movement and providing a second image signal responsive thereto, wherein said second path is one of the same and substantially coincidental to said first path.

15 2. An apparatus as recited in Claim 1, wherein a selected region of a patient's body is positionable so that said radiation source is on a first side thereof and said radiation detection means and said ultrasound transducer are both positioned on an opposing, second side thereof.

3. An apparatus as recited in Claim 2, further comprising:  
20 a support layer having a first side for contacting a selected region of a patient's body and an opposing second side, wherein said radiation detection means and said ultrasound transducer are both located adjacent to said second side of the supporting layer.

4. An apparatus as recited in Claim 3, wherein said first side of the support layer is of an arcuate configuration.

25 5. An apparatus as recited in Claim 4, wherein said first path is arcuate.

6. An apparatus as recited in Claim 3, wherein said first side of the support layer is of a planar configuration.

7. An apparatus as recited in Claim 6, wherein said second path is linear.

8. An apparatus as recited in Claim 1, further comprising:  
5 processor means for controlling operation of said radiation source, radiation detection means and ultrasound transducer, wherein said radiation detection means and said ultrasound transducer are controllable for at least partially overlapping imaging operations.

9. An apparatus as recited in Claim 8, further comprising:  
drive means for effecting co-scanning movement of said radiation detection means  
10 and said ultrasound transducer.

10. An apparatus as recited in Claim 9, wherein said radiation detection means and said ultrasound transducer are interconnected in fixed relation to one another.

11. An apparatus as recited in Claims 10, wherein one of said radiation detection means and said ultrasound transducer is supportably carried by the other.

12. An apparatus as recited in Claim 1, wherein said radiation detection means is  
15 maintained at a substantially fixed distance from said radiation source throughout said scanning movement thereof.

13. An apparatus as recited in Claims 1, wherein said radiation detection means comprises an array of detector elements and said ultrasound transducer comprises an array of  
20 transducer elements, and wherein said arrays are oriented in like relation relative to said first path and second path, respectively.

14. An apparatus as recited in Claims 1, wherein at least one said radiation detection means and said ultrasound transducer is of a width that is less than a width of a selected region of a patient's body to be imaged.

15. An apparatus as recited in Claims 1, wherein said radiation detection means and said ultrasound transducer have corresponding widths which are each less than a width of a selected region of a patient's body to be imaged.

16. An apparatus as recited in Claims 15, wherein said radiation detection means  
5 and said ultrasound transducer have corresponding lengths which are each at least as great as a length of a selected region of a patient's body to be imaged.

17. An apparatus as recited in Claim 1, further comprising:  
a display for displaying a plurality of images of said selected body region generated  
using said first and second image signals; and,  
10 a user input for selecting a desired image by identifying a location of interest in a different image.

18. An apparatus as recited in Claim 1, wherein a pair of ultrasound transducers  
are positionable for scanning movement along substantially parallel paths, wherein one of  
said pair is located on a first side of said selected body region and the other of said pair is  
15 located on an opposing second side of said selected body region.

19. A method for use in obtaining image data for a selected region of a patient's  
body, comprising:

transmitting a radiation signal from a radiation source through a selected region of a  
patient's body;  
20 moving a radiation detection means along a first path during said transmitting step,  
wherein said radiation detection means receives a portion of said radiation signal passing  
through a selected region of a patient's body and provides a first image signal responsive  
thereto; and,

displacing an ultrasound transducer along a second path that is one of the same and  
25 substantially coincidental to said first path, wherein said ultrasound transducer receives an  
ultrasound signal from said selected region of a patient's body and provides a second image  
signal responsive thereto.

20. A method as recited in Claim 19, further comprising:

immobilizing said selected region of a patient's body within a predetermined frame of reference, wherein said transmitting, moving and displacing steps are completed during said immobilizing step.

5 21. A method as recited in Claim 20, wherein said mobilizing step includes:  
compressing said selected region of a patient's body.

22. A method as recited in Claim 19, wherein said radiation source is located on a first side of said selected body region and said radiation detection means and said ultrasound transducer are both positioned on an opposing second side thereof.

10 23. A method as recited in Claim 19, wherein said moving and displacing steps at least partially overlap.

24. A method as recited in Claim 23, wherein said moving and displacing steps are completed in substantial synchronicity.

15 25. A method as recited in Claim 19, wherein said moving and displacing steps are completed sequentially.

26. A method as recited in Claim 19, wherein said ultrasound transducer transmits said ultrasound signal into said selected body region during said displacing step.

27. A method as recited in Claim 19, wherein said displacing step includes:  
displacing a pair of ultrasound transducers along substantially parallel paths, wherein  
20 one of said pair is located on a first side of said selected body region and the other of said pair is located on an opposing second side of said selected body region, and wherein said pair provide second image signals.

28. A method as recited in Claim 19, further comprising:

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selecting a desired image for display by identifying a location of interest in a different displayed image.